Attachment J02

Fort Eustis Potable Water System

Table of Contents

List of Tables

J02 Fort Eustis Water System

J02.1 Fort Eustis Overview

Fort Eustis is a U.S. Army installation located in the western neck of a peninsula formed on the west by the James River and Hampton Roads and on the east by the York River and the Chesapeake Bay. Named in honor of Brevet Brig. Gen. Abraham Eustis, a distinguished artillery officer who served from 1808 to 1843, Fort Eustis was established in 1918 as an artillery training area. It is currently home to the Army Transportation Center and School, the Army Aviation Logistics School, the 7th Transportation Group and other command activities. The Post trains thousands of officers and enlisted soldiers every year in aviation maintenance, harbor craft operations and maintenance and rail and line haul motor transport. The Post is also responsible for Fort Story, an over-the-shore training sub-installation near Virginia Beach, where Army personnel learn logistical operations.

J02.2 Water System Description

The Fort Eustis potable water system comprises all appurtenances physically connected to the system from the point in which the Government ownership currently starts to the point of demarcation defined by the real estate instruments. Generally, the point of demarcation will be the building footprint. The system may include, but is not limited to the storage tanks and the distribution lines including service laterals. The following description and inventory is included to provide the Offeror with a general understanding of the size and configuration of the distribution system. The inventory is assumed to be approximately 90 percent complete. The Offeror shall base the proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description. Under no circumstances shall the successful Contractor be entitled to any rate adjustments based on the accuracy of the following description and inventory.

J02.2.1 Water System Fixed Equipment Inventory

The Fort Eustis potable water distribution utility system is currently owned and operated by the Army. It is currently regulated as a Class IV Consecutive Water Plant. The included system contains approximately 50 miles of mains, which range from less than 2 inches to 14 inches in diameter. Most of the mains are ductile iron. The average age of the system is estimated to be approximately 35 years.

Fort Eustis is currently supplied potable water by the City of Newport News, Virginia, at one connection point near the Main gate, located in the northeast section of the Post. Flows are metered by two 10-inch meters. One-way flow is assured using Reduced Pressure Zone (RPZ) type back flow prevention devices located in Building 7.

The Range Area water system is not connected to the main cantonment distribution system and the distribution lines and water wells serving that system are not included in the scope of the privatization effort and will be retained by the Army.

Booster/Lift Stations

A single pumping facility, Building No. 6, serves the Installation and maintains system pressures and water levels in the elevated storage tanks. Building No. 6 is an approximately 750 square foot brick masonry structure housing two 10-inch 60 HP Fairbanks Morse water pumps. The pumps typically run for ten hours and then cycle off for 14 hours. A motor-operated by-pass valve is located just outside the building. The pumps are approximately 8-10 years old.

System Storage

Potable water is stored in three elevated storage tanks with a total capacity of 900,000 gallons. Each tank is equipped with cathodic protection and is connected to the distribution system through altitude valves. The cathodic protection system for all the water storage tanks is serviced two times per year.

Water tower #1618 is a 500,000 gallon elevated water tower located on the west side of the main cantonment and was constructed in 1952. Water tower #216 is a 200,000 gallon elevated water tower located on the north side of the main cantonment and was constructed around 1949. Water tower #1738 is a 200,000 gallon elevated water tower located on the east side of the main cantonment and was constructed in early 1950's. All three elevated water towers were painted and rehabilitated in June 1990.

Not included in this inventory is a 56,000-gallon ground storage tank and associated pump building, #589, which provides water storage for fire protection of the nearby McDonald Army Hospital. Also not included in this inventory is a 325,000-gallon ground storage tank, No. 2403, and the associated pump building, No. 2404, located at the Felker Army Airfield, and utilized for a fire deluge system at the airfield. Both tanks are connected to the potable water system and one-way flow is assured by use of RPZ back flow preventers.

Distribution System

The distribution system serves the Main Cantonment area and the Felker Army Airfield. The buildings of a third area, the Range Area, are not served by the distribution system, but are served by a well. The existing potable water distribution system has approximately 356,000 linear feet of mains and lateral lines. Sizes range from 1½ - 14 inches in diameter and are of various material types. Cast iron and ductile iron are the most common pipe materials found throughout the system, with asbestos cement and PVC also found. Family housing services are typically 1½ to 3-inch plastic. Main post services are mainly cast iron or galvanized steel. Approximately fifteen years ago, the services in the family housing area were replaced with plastic push-pull type piping. The system includes main valves, post-indicator valves, limited monitoring and warning systems, fire hydrants, booster pump station, backflow prevention station, and elevated storage tanks.

At the main pier at Third Port, the water piping is enclosed in a concrete raceway, which also encloses the wastewater and sludge (bilge water) lines. Four inch piping is used for each of the three systems.

Pressure throughout the system typically ranges around 60 pounds per square inch (psi).

The distribution system, which was originally installed in the 1940s and 1950s, has been modified only minimally throughout the years with individual sections of the system undergoing rehabilitation either as line repair or valve and hydrant replacement. In most cases the lines have been replaced with ductile iron pipe or C900 PVC pipe.

Irrigation piping serving landscaped areas and the golf course is not reflected in the accompanying inventory and privatization initiative.

System Condition

A discussion of the age and condition of the water distribution system, repair history, and repairs that are needed is available in the technical library.

Bacteriological Monitoring Program and Sampling Stations

In accordance with Virginia Department of Health Waterworks Regulations, 12 VAC 5-590-370, the waterworks owner shall collect total coliform samples at sites that are representative of water throughout the distribution system according to a written sample siting report, either established or approved by the commissioner of the Virginia Department of Health. Fort Eustis has established a bacteriological monitoring program for the on-post water distribution system. Fifteen routine sampling sites and five additional sampling sites have been established and installed. Detailed information on the monitoring program and a map of the sampling sites will be available in the technical library.

Buildings and Equipment Associated with Elevated Water Tanks

There is a two-compartment building located within the fenced area containing Elevated Water Tank 1738. This building contains a diesel generator, electronic equipment associated with antennas, and Utilities Monitoring and Control System equipment. The building and most of its contents do not convey. Only the equipment and controls directly associated with operation of the water system conveys. The Grantee will have access as required.

There is a one-compartment building located within the fenced area containing Elevated Water Tank 216. This building contains batteries for backup power, electronic equipment associated with antennas, and Utilities Monitoring and Control System equipment. The building and most of its contents do not convey. Only the equipment and controls directly associated with operation of the water system conveys. The Grantee will have access as required.

J02.2.1.2 Inventory

Table 1 provides a general listing of the major water system fixed assets for the Fort Eustis water system included in the purchase. The system will be sold in a "as is, where is" condition without any warranty, representation, or obligation on the part of Government to make any alterations, repairs, or improvements. Ancillary equipment attached to, and necessary for, operating the system, though not specifically mentioned herein, is considered part of the purchased utility**.**

TABLE 1
1. Fixed Inventory
Water Distribution System Fort Eustis

Item	Size	Quantity	Unit	Approximate Year of Construction
Pipe	Less than 2" *	850	Linear Feet	Various
	2"	4,240	Linear Feet	Various
	2 ½"	7,554	Linear Feet	Various
	3"	1,860	Linear Feet	Various
	4"	21,799	Linear Feet	Various
	6"	59,635	Linear Feet	Various
	8"	109,911	Linear Feet	Various
	10"	25,370	Linear Feet	Various
	12"	24,379	Linear Feet	Various
	14"	10,232	Linear Feet	Various

Item	Size	Quantity	Unit	Approximate Year of Construction
Subtotal		265,830		
Building Connections		1,387	Each	Various
Main Valves	6" & larger	737	Each	Various
Hydrants		475	Each	Various
Post Indicator Valves		55	Each	
Sampling Sites		20	Each	2000
Storage Tank 1618	500,000	1	Gallons	
Storage Tank 216	200,000	1	Gallons	
Storage Tank 1738	200,000	1	Gallons	
Water Meters listed in Tables 5, 6, & 7.	Various	Approx 35	Each	Various
1500 gpm Booster Pump Station, Bldg 6	2-750 gpm Pumps	1 Station	2 pumps	1992
RPZ Backflow Pre-venter Sta., Bldg 7	10"	1 Station	2 backflow preventers	1996/1997
* Building service lines are not included in this length.				

J02.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools Inventory

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Contractor shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

TABLE 2
2. Spare Parts
Water Distribution System Fort Eustis

Qty	Item	Make/Model	Description	Remarks
Fort Eustis maintains an inventory of spare parts for the water distribution system. Contents of the inventory vary as items are used and/or purchased. Availability of this inventory to the new owner will be negotiated before or during the transition period.				

TABLE 3
3. Specialized Equipment and Vehicles
Water Distribution System Fort Eustis

Description	Quantity	Location	Maker
No specialized equipment or vehicles for maintenance of the Fort Eustis water distribution system will be transferred to the new owner of the system.			

J02.2.3 Water System Manuals, Drawings, and Records Inventory

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
4. Manuals, Drawings, and Records

Water Distribution System Fort Eustis

Qty	Item	Description	Remarks
Fort Eustis maintains a limited collection of technical manuals, drawings, and records on the installed components of the water distribution system. This information will be transferred to the new owner during the transition period. System maps will be available in the technical library.			

J02.3 Current Service Arrangement

The Army owned water system at Fort Eustis receives water from the City of Newport News, Virginia.

J02.4 Secondary Metering

The Installation requires secondary meters for billing of reimbursable customers, commercial establishments, and utility usage management. The Contractor shall assume full ownership and responsibility for existing and future secondary meters IAW Paragraph C.3, Future Secondary Meters.

J02.4.1 Existing Secondary Meters – Government

The meters listed in Table 5 are for use in the billing of Government reimbursable customers.

TABLE 5

5. Existing Secondary Meters - Government

Water Distribution System Fort Eustis

BLDG N0.	METER TYPE	METER NO.	LOCATION
MTMC 661	Water	15-87-664	Off Washington Avenue
1383	Water	30071048	Meter by fire plug
660	Water	85073497	Meter inside. Get key from auto repair 1300 hrs check w/t
1380	Water	6084012	Gas station (in equipment room)
1386	Water	31-815-425	Main PX, located in equipment room
1377	Water	20-64-065	Laundry center in utility room
1382	Water		In parking lot on left side of bldg in back
1382	Water		In parking lot on left side of bldg in back
1382	Water		In parking lot on left side of bldg in back
James River Reserve Fleet	Water		
Golf course well	City water meter	24587100	Off Gravel Road near Golf Course Maintenance
675 Bowling alley	Water		In mechanical room on side of bldg facing car wash
1034	Water	15-29-172	Side of Main Bldg
1035	Water	52-36-71	Under fence Schultz Place
2124	Water		Fort Eustis Pool Closed Oct-May
1328 Burger King	Water	7090320	

J02.4.2 Existing Secondary Meters – Commercial

The meters listed in Table 6 are for use in the billing of commercial customers.

TABLE 6

6. Existing Secondary Meters - Commercial
Water Distribution System Fort Eustis

BLDG N0.	METER TYPE	METER NO.	LOCATION
2	Water	3740735	Greyhound Bus Terminal. In ground close to center of bldg where taxis park

J02.4.3 Existing Secondary Meters – Record Purpose

The meters listed in Table 7 are for use for record purposes in utility usage management.

TABLE 7
7. Existing Secondary Meters - Record Purpose
Water Distribution System Fort Eustis

BLDG N0.	METER TYPE	METER NO.	LOCATION
409	Water	759380	Behind boilers (near water softener)
587	Water	762042	Straight in door, high location near deaerator tank
801	Water	758111	Behind boilers (don't stand in front of rear sight glass)
1411	Water	758365	Inside door to right (located low in adjacent room)
2116	Water	768988	Located inside door to left (medium height)
2701	Water	488510	By water softener tank (not meters located high up)
Hospital 576	Water	104453	In janitor's closet room #23 X-10
Hospital 574	Water	104456	In room 18 X10
Hospital 586	Water	104452	In mechanical room X-10
Hospital 576	Water	104454	In old wing mechanical room
Hospital 579	Water	49-309-877	Break Room Between Lockers
Hospital 574	Water	104455	Located in new wing mechanical room X10
Golf course well	Well water meter	1155049	Off Gravel Road near Golf Course Maintenance
Anderson Field House	Water	H980426	In Mechanical Room
647 – Theater	Water		In Mechanical Room
1313 – Library	Water		In Mechanical Room
Bldg 641	Water	145-62-43	On right front side of bldg on Washington Blvd side
Bldg 641	Water	145-62-44	Right front side on Washington Blvd side

J02.5 Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoicing (IAW paragraph G.2) for the previous month's services. The Contractors invoice shall be prepared in a format proposed by the Contractor and accepted by the Contracting Officer.
2. Monthly Service Interruption Report for the previous month.
3. Meter Reading Report in support of internal billings, water usage management, and monitoring.
4. System Efficiency Report. If required by Paragraph C.3 the Contractors shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer.

J02.6 Energy Savings and Conservation Projects

IAW paragraph C.3, Utility Service Requirement, the following projects have been implemented by the Government for system monitoring, water use, and waste reduction purposes:

Fort Eustis maintains and operates a Utility Monitoring and Control System (UMCS). The UMCS is used to monitor and control the on-post utility systems. It is connected to components of the utility systems. After privatization of the water distribution system, the UMCS will be used to monitor certain functions of the water distribution system. The contractor will be required to cooperate with UMCS operation at no cost to the government by allowing continued connection to the utility components and connection to existing and new components when required for support of UMCS monitoring. Detailed information on the UMCS and its operation will be available in the technical library.

J02.7 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Fort Eustis boundaries.

J02.8 Off-Installation Sites

There are no off-installation sites associated with this scope.

J02.9 Specific Transition Requirements

IAW Paragraph C.13, Operational Transition Plan, **Table 8** lists service connections and disconnections required upon transfer, and **Table 9** lists the improvement projects required upon transfer of the Fort Eustis water system.

TABLE 8
8. Service Connections and Disconnections
Water Distribution System Fort Eustis

Location	Description
None Identified as of the beginning of FY01. A list of service connections and disconnections for the ten-year period from FY91 through FY00 is available in the technical library. Required service connections and disconnections will be provided to the contractor as the requirements become known.	

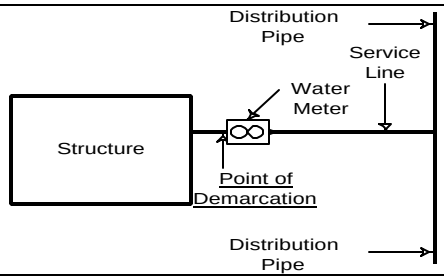
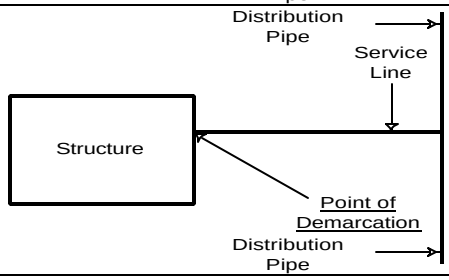
TABLE 9
9. System Improvement Projects
Water Distribution System Fort Eustis

Project Location	Project Description
None Identified as of the beginning of FY01.	

J02.10 Potable Water System Points of Demarcation

The point of demarcation is defined as the point on the piping system where ownership changes from the Grantee to the building owner. The table below identifies the general locations of these points with respect to the building served. During the operation and maintenance transition period, concurrence on specific demarcation points will be documented during the joint inventory of facilities.

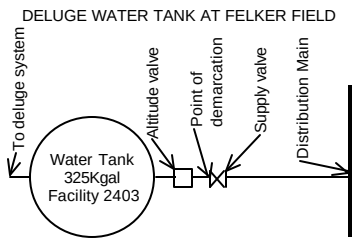
TABLE 10
10. Points of Demarcation
Water Distribution System Fort Eustis

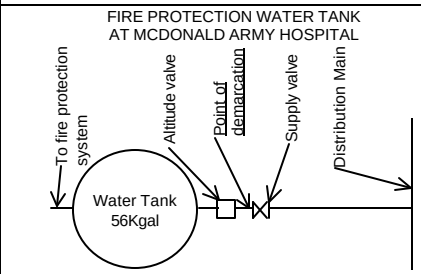
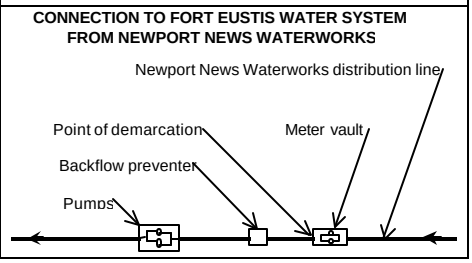
Point of Demarcation	Applicable Scenario	Sketch
Water meter or backflow prevention device, or valve (closest apparatus to the exterior of the structure)	Water meter, backflow prevention device, or valve is located on the service line entering the structure within 25 feet of the exterior of the structure.	
Point where the service line enters the structure	No water meter, backflow device, or valve exists on the service line entering the structure.	

J02.11 Unique Points of Demarcation

The following table lists anomalous points of demarcation that do not fit any of the above categories.

TABLE 11
11. Unique Points of Demarcation
Water Distribution System Fort Eustis

Point of Demarcation	Applicable Scenario	Sketch
Downstream side of the last cutout valve before the altitude valve at the 325 kgal deluge water supply tank (Bldg 2403).	WATER TANK AT FELKER FIELD The deluge water tank, Bldg 2403, at Felker Army Airfield is supplied from the water distribution system.	

Point of Demarcation	Applicable Scenario	Sketch
Downstream side of the last cutout valve before the altitude valve at the 56 kgal fire protection water supply tank	WATER TANK AT MCDONALD ARMY HOSPITAL The fire protection water tank with associated pump bldg 589, at McDonald Army Hospital is supplied from the water distribution system.	
Downstream side of the water meter vault.	FORT EUSTIS CONNECTION TO NEWPORT NEWS WATERWORKS Water service to Fort Eustis from Newport News Waterworks.	

J02.12 Plants and Tanks

TABLE 12
12. Plants and Tanks
Water Distribution System Fort Eustis

Description	Facility Number	State Coordinates	Other Information
Elevated Water Tank	#216	X – 12041467.280000 Y– 3588840.460000	200Kgal capacity
Elevated Water Tank	#1618	X – 12037281.090000 Y – 3585832.110000	500Kgal capacity
Elevated Water Tank	#1738	X – 12043919.940000 Y – 3584703.300000	200Kgal capacity

Note: No land is to be transferred with the Fort Eustis Water System.

J02.13 Antennas on Elevated Water Tanks

The installation reserves the exclusive right to use elevated water tanks to support communications antennas and associated equipment at no cost to the government. The tanks will be used by the installation to support existing antennas and new antennas as needed. Any antenna or electronic equipment to be installed on the water tanks by the Grantee, or others through agreements with the Grantee, must be approved by the installation and must be compatible with the installation's antenna systems. The installation's antennas will always have primacy should there be compatibility conflicts between antennas.